

What is claimed is:

- 1 1. In an Internet Protocol (IP) network having a plurality of nodes, a method of

2 designating a queue-responsible node comprising the steps of:

3 (a) utilizing the IP addresses of said plurality of nodes to designate a

4 master node;

5 (b) designating all other nodes as slave nodes; and

6 (c) maintaining the queue positions of all nodes in the network in a master

7 queue at said master node.
- 1 2. The method of claim 1 wherein said designating steps are performed by

2 comparing numerical values of node IP addresses.
- 1 3. The method of claim 1 wherein the node having the highest IP address is

2 designated said master node.
- 1 4. The method of claim 1 wherein the node having the lowest IP address is

2 designated said master node.
- 1 5. The method of claim 1 wherein each node of the network is capable of

2 functioning as either said master node or one of said slave nodes.
- 1 6. The method of claim 1 further comprising the step of maintaining a copy of

2 said master queue at one or more of said slave nodes.
- 1 7. The method of claim 6 wherein said step of maintaining a copy of said master

2 queue is performed at each of said slave nodes.

1 8. The method of claim 1 further comprising the step of each slave node
2 requesting a queue position from said master node for access to shared network
3 resources.

1 9. The method of claim 1 further comprising the step of detecting the connection
2 of one or more additional nodes to the network and thereupon reiterating said
3 steps (a) through (c).

1 10. The method of claim 1 further comprising the step of detecting the
2 disconnection of one or more nodes from the network and thereupon reiterating
3 said steps (a) through (c).

1 11. The method of claim 10 further comprising the step of deleting from said
2 master queue all queue positions corresponding to said disconnected nodes.

1 12. In an Internet Protocol (IP) network having a plurality of nodes, a method of
2 designating a queue-responsible node comprising the steps of:

3 (a) utilizing the IP addresses of said plurality of nodes to designate a
4 master node;

5 (b) designating all other nodes as slave nodes;

6 (c) maintaining the queue positions of all nodes in the network in a master
7 queue at said master node;

8 (d) detecting changes in the number and identity of nodes connected to the
9 network and thereupon reiterating steps (a) through (c).

1 13. The method of claim 12 wherein step (d) comprises detecting the
2 disconnection of the master node from the network.

1 14. The method of claim 12 wherein step (d) comprises detecting the connection
2 of one or more additional nodes to the network.

1 15. The method of claim 12 wherein step (d) comprises detecting the
2 disconnection of one or more slave nodes from the network, further comprising
3 the step of deleting from the master queue all queue positions corresponding to
4 said one or more disconnected slave nodes.

1 16. A system for queue-handling in an Internet Protocol (IP) network having a
2 plurality of nodes, comprising:

3 a master node;

4 a master queue at said master node for maintaining queue positions of all
5 nodes in the network;

6 one or more slave nodes;

7 software for designating said master node and said one or more slave
8 nodes according to the IP addresses of the nodes connected to the network at
9 any given time; and

10 software for detecting changes in the number and identity of nodes
11 connected to the network.

1 17. The system of claim 16 further comprising software associated with one or
2 more of said slave nodes for maintaining a copy of said master queue at said one
3 or more slave nodes.

1 18. The system of claim 16 further comprising software associated with each of
2 said nodes for maintaining a copy of said master queue at each of said slave
3 nodes.

1 19. The system of claim 16 wherein the network comprises a Local Area Network
2 (LAN).

1 20. The system of claim 16 wherein the network comprises a Virtual Local Area
2 Network (VLAN).

1 21. The system of claim 16 wherein the network comprises a Wide Area Network
2 (WAN).

1 22. The system of claim 16 wherein the network comprises a cluster within an
2 area network.

1 23. A system for queue-handling in an Internet Protocol (IP) network comprising
2 at least a first cluster and a second cluster, each cluster further comprising:

3 a plurality of nodes with at least one of said nodes being a master node
4 and the remaining nodes being slave nodes;

5 a master queue at said master node for maintaining queue positions of all
6 nodes in the cluster;

7 software means for dynamically designating said master node and said
8 slave nodes according to the IP addresses of the nodes connected to the cluster
9 at any given time; and

10 software for detecting changes in the number and identity of nodes
11 connected to the cluster.

1 24. The system of claim 23 further comprising software associated with one or
2 more of said slave nodes in each cluster for maintaining a copy of said master
3 queue at said one or more slave nodes in each cluster.

1 25. The system of claim 23 further comprising software associated with each of
2 said slave nodes for maintaining a copy of said master queue at each of said
3 slave nodes.

1 26. The system of claim 23 wherein the network comprises a Local Area Network
2 (LAN).

1 27. The system of claim 23 wherein the network comprises a Virtual Local Area
2 Network (VLAN).

1 28. The system of claim 23 wherein the network comprises a Wide Area Network
2 (WAN).